

L 32724-66 ENT(d)/EWP(1) IJP(c)

ACC NR: AT6010592

SOURCE CODE: UR/2582/65/000/015/0065/0084

AUTHOR: Gindikin, S. G. (Moscow); Muchnik, A. A. (Moscow)

ORG: None

TITLE: Solution of a completeness problem for a <sup>16</sup>system of logic algebra functions with unreliable realization

SOURCE: Problemy kibernetiki, no. 15, 1965, 65-84

TOPIC TAGS: algebraic logic, cybernetics, reliability, *CIRCUIT RELIABILITY*

ABSTRACT: The authors study the completeness of logic algebra function systems with respect to the reliability of their realization. Determinate circuits of functional elements with connections which do not change during operation are studied. It is assumed that superposition and identification operations of the inputs occur without error and that errors of the various elements in the circuit are independent. The characteristics of a circuit made up of unreliably operating functional elements are discussed. Conditions for completeness with respect to reliability constants and for the general case are discussed. It is shown that a reliable circuit can be constructed for any logic algebra function. Orig. art. has: 4 figures and 8 formulas.

SUB CODE: 09 / SUBM DATE: 29Sep64 / ORIG REF: 004 / OTH REF: 003

Card 1/1 JS

Transformers, High Voltage  
Transmission Lines, High Voltage

Collection of the Power Capacity of a Grounded Trans-  
former," A. Ya. Michalik, Candidate in Technical Sci-  
ences, Military-Engineering Red Star Academy Press,  
Moscow, 38 pp

"Elektricheskoe" No 9

A method of grounded neutral point is required in  
systems conducting high voltages. However, the  
danger of shorting to the ground still exists. A  
system of arc-quenching, built around Peterson's  
circuit, has been incorporated into these circuits to  
prevent this danger.

Electricity (Contd)

29723  
Sep 1974

This article is based on data  
which has been derived as a result of experiments on  
the Moscow 6-kv cable circuit. Mathematical formulas  
resulting from the data are given.

PA 29723

TECHNICAL, L. YA.

MUCHNIK, Abram Yakovlevich; PARFENOV, Konstantin Alekseyevich; Primal  
uchastnye: PTUSHKIN, A.T., kand.tekhn.nauk.; SOKOLOV, A.Ya., prof.,  
retsensent; GLEBOV, I.A., dotsent, retsensent; YASTREBOV, P.P.,  
dotsent, retsensent; KHMELEVNITSKAYA, A.Z., red.; DOBUZHINSKAYA,  
L.V., tekhn.red.

[Electrical equipment of food industry enterprises] Elektro-  
oborudovanie pishchevykh predpriyatii. Moskva, Pishcheprom-  
izdat, 1958. 437 p. (MIRA 12:8)  
(Food industry--Electric equipment)

MUCHNIK, A.Ya.; PARFENOV, K.A.

Use of electromechanical analogies in studying the transient thermal processes taking place in an electric bread-baking stove. Izv. vys. ucheb. zav.: pishch. tekhn. no. 2:125-132 '58. (MIRA 11:10)

1. Moskovskiy tekhnologicheskii institut pishchevoy promyshlennosti. Kafedra elektrotekhniki.  
(Stoves, Electric--Electromechanical analogies)

MUCHNIK, Abram Yakovlevich; PARFENOV, Konstantin Alekseyevich; DREVS, Georgiy Vecheslavovich; KHRUSTALEVA, N.I., red.; GARINA, T.D., tekhn. red.

[General electric engineering and electric equipment] Obshchaya elektrotehnika i elektrooborudovanie. Moskva, Gos. izd-vo "Vysshaya shkola," 1961. 405 p. (MIRA 14:9)  
(Electric engineering) (Electric apparatus and appliances)

MUCHNIK, Abram Yakovlevich; PARFENOV, Konstantin Alekseyevich;  
KLYUCHEV, V.I., dots., retsenzents; MENSCHNIKOV, I.I.,  
dots., retsenzents; KHMEL'NITSKAYA, A.Z., red.;  
PECHENKINA, O.P., tekhn. red.

[Electrical equipment of food industry enterprises] Elek-  
trooborudovanie pishchevykh predpriyatii. Izd.2., perer.  
Moskva, Pishchepromizdat, 1963. 407 p. (MIRA 17:3)

1. Kafedra elektrooborudovaniya promyshlennykh predpriyatii  
Moskovskogo energeticheskogo instituta (for Klyuchev).
2. Moskovskiy tekhnologicheskii institut myasnoy i molochnoy  
promyshlennosti (for Menshchikov).

AUTHORS: Kolumbi, L.S. and Muchnik, D.A. SOV/68-58-8-9/28

TITLE: A Decrease in the Resistance of the Heating System and an Improvement of Heating Along the Height of a Coking Charge on Coke Ovens of the PK-47 Type (Snizheniye soprotivleniya otopitel'noy sistemy i uluchsheniye obogreva koksovogo piroga po vysote na koksovykh pechakh PK-47)

PERIODICAL: Koks i Khimiya, 1958, Nr 8, pp 26 - 27 (USSR)

ABSTRACT: The draught in Nr 1 battery (PK-47 type) on the Voroshilov Works, heated by blast furnace <sup>gas</sup> was insufficient. It was increased by replacing regenerators made from ordinary bricks by regenerators made from shaped bricks and a complete opening of the top dumpers. The control of the draught was maintained by the bottom dumpers. The distribution of pressures in the heating system is shown in the figure. There is 1 figure.

ASSOCIATION: Voroshilovskiy koksokhimicheskiy zavod (Voroshilovsk Coke Oven Works)

Card 1/1 1. Ovens--Performance 2. Temperature--Control

SOV/68-58-9-7/21

**AUTHORS:** Sidorov, G.I., and Muchnik, D.A.

**TITLE:** Some Remarks on a Typical Design of a Coke Grading Plant  
(Zamechaniya po tipovomu proyektu koksosortirovki)

**PERIODICAL:** Koks i Khimiya, 1958, Nr 9, pp 27-31 (USSR)

**ABSTRACT:** Deficiencies in the typical installations of coke grading plants (coaling wharfe - screening plant - dispatching plant) are discussed. The main points: the length of coke wharves is usually insufficient and overcrowding of conveyors.

**ASSOCIATION:** Voroshilovskiy koksokhimicheskiy zavod  
(Voroshilovsk Coking Works)

Card 1/1



SOV/68-59-4-10/23

AUTHOR: Muchnik, D.A.

TITLE: A New Design of a Larry Car (Novaya konstruktsiya zagruzochnogo vagona)

PERIODICAL: Koks i Khimiya, 1959, Nr 4, pp 31-32 (USSR)

ABSTRACT: A brief description without technical details of a new type of larry car (fig 1) in operation on one of the coke oven batteries on the Voroshilovskiy Works is given. The special feature of the larry car is that the whole operation of charging the larry car and charging of the ovens is done by one operator sitting in an air conditioned cabin situated at the bottom of the car. The cabin has two operating panels either of which can be used depending on the direction of the wind and direction of travel of the car. Cleaning of the ascension pipes is done by push button operation from

Card 1/2

A New Design of a Larry Car

SOV/68-59-4-10/23

the cabin. There are 2 figures.

ASSOCIATION: Voroshilovskiy Koksokhimicheskiy Zavod (Voroshilovskiy  
Coking Works)

Card 2/2

IVANOV, Ye.B.; BELUKHA, A.A.; MUCHNIK, D.A.

Quality of coke as determined by its content in the 40-25 ~~mm~~ class.  
Koks i khim. no.3:29-31 '61. (MIRA 14:4)

1. Krivorozhskiy metallurgicheskiy zavod.  
(Coke)

MUCHNIK, D.A.

Method for evaluating the operating efficiency of blending  
machines. Koks i khim. no.9:11-15 '62. (MIRA 16:10)

1. Krivorozhskiy metallurgicheskiy zavod.  
(Coke industry--Equipment and supplies)  
(Coal preparation)

IVANOV, Ye.B.; SMUL'SON, A.S.; BELUKHA, A.A.; MUCHNIK, D.A.; KAL'CHENKO, V.I.

Predicting the size of coke. Koks i khim. no.10:14-19 '62.

(MIRA 16:9)

1. Krivorozhskiy metallurgicheskiy zavod.  
(Coke)

MUCHNIK, D.A.; IVANOV, Ye.B.; KUSHNIROV, V.F.; VASIL'CHENKO, S.O.; KROTOVA, N.I.

Effect of the coarseness of crushing of the various coal charge  
components of the quality of coke. Koks i khim. no.1:5-7 '63.  
(MIRA 16:2)

1. Krivorozhskiy metallurgicheskiy zavod.  
(Coke)

BRUK, A.S.; LEYBOVICH, R.Ye.; IVANOV, Ye.B.; SMUL'SON, A.S.; BELUKHA, A.A.; MUCHNIK, D.A.; FARTUSHNAYA, R.M.; Prinimali uchastiye: KUTEVOY, P.M.; GOL'DBERG, P.Ya.; NECHAYEVA, A.P.; KUBYSHKINA, L.I.; SHEYKHET, A.M.; VASIL'CHENKO, S.I.; BARASH, D.A.; KARPOVA, K.K.; KHODANKOV, A.T.

Effect of temperature changes in the control heating flues on the quality of the metallurgical coke. Koks i khim. no.7:26-27 '63. (MIRA 16:8)

1. Dnepropetrovskiy metallurgicheskiy institut (for Bruk, Leybovich, Kutevoy, Gol'dberg, Nechayeva, Kubyshkina, Sheykhhet).
  2. Krivorozhskiy metallurgicheskiy zavod (for Ivanov, Smul'son, Belukha, Muchnik, Fartushnaya, Vasil'chenko, Barash, Karpova, Khodankov).
- (Coke ovens) (Coke---Testing)

MUCHNIK, D.A.

Effect of the presence of gas coals in the coking charge on the  
columnar structure of the coke pieces. Koks i khim. no.8:7-10  
'63. (MIRA 16:9)

1. Krivorozhskiy metallurgicheskiy zavod.  
(Coke—Testing)



MUCHNIK, D.A.

Mechanism of the effect of lean coal additives on the quality  
of coke. Koks i khim. no.1:10-16 '64. (MIRA 17:2)

1. Krivorozhskiy metallurgicheskiy zavod.

<sup>E</sup>  
MUCENIK, F., inzhener

Antifriction bushings made of bronze waste. Avt. transp. 33  
no. 4:35 Ap '55. (MIRA 8:7)  
(Bearings (Machinery))

CHIKALOV, G.P.; ROYTMAN, Z.L.; LEVITSKIY, Sh.A.; MUCHNIK, F.E.; MITSKEVICH,  
Z.A.; SHAPIRO, A., *otv. za vypusk*

[Manufacturing motor-vehicle parts of capron]Izgotovlenie detalei  
avtomobilia iz kaprona. Kiev, Nauchno-issl. in-t mestnoi i top-  
livoi promyshl., 1959. 45 p. (MIRA 16:1)  
(Nylon) (Motor vehicles—Design and construction)

S/653/61/000/000/037/051  
1042/1242

AUTHOR: Muchnik, F.E.

TITLE: Manufacture of caprone automotive parts

SOURCE: Plastmassy v mashinostroyenii i priborostroyenii.  
Pervaya resp. nauch.-tekhn. konfer. po vopr. prim.  
plastmass v mashinostr. i priborostr., Kiev, 1959.  
Kiev, Gostekhizdat, 1961, 409-415

TEXT: The physicochemical, mechanical, economical and technological advantages of caprone are listed. Because of their low heat conductivity, caprone parts become overheated and deformed and creep sets in at high speeds. This is best avoided by using metal parts coated with caprone. Caprone components used in the automotive industry are listed. Worn components can be renovated by coating with caprone. In the application of caprone components, clearances must be increased to allow for thermal expansion. The technology of pro-

Card 1/2

S/653/61/000/000/037/051  
I042/I242

Manufacture of caprone ...

duction of caprone parts is discussed in great detail. The quality of the raw stock must be controlled since it affects the properties of the finished product. Quick methods are available for the determination of the content of low-molecular weight compounds and of specific viscosity of liquid caprone. ✓

Card 2/2

MUCHNIK, G.F., inzhener.

New graphic-analytic method for computing temperatures. Teploener-  
getika 3 no.6:57-59 Je '56. (MLRA 9:8)

1. Orgres.

(Temperature--Measurement)

*From H.A.I.F. 10/14*  
MESHCHANINOV, I.A., inzhener; MUCHNIK, G.F., inzhener.

Inadequate compensation for heat extension of tubes in TP-170  
boilers. *Energetik* 5 no.2:27-32 F '57. (MIRA 10:3)  
(Boilers)

GORDON, A.R. (Moskva); MUCHNIK, G.F. (Moskva)

Determining the integral degree of blackness of niobium as  
dependent on the degree of surface roughness. Teplofiz. vys.  
temp. 2 no.4:562-564 J1-Ag '64. (MIRA 17:9)



MUCHNIK, G. F.

PA - 3565

AUTHOR:

PETUKHOV, B.S., MUCHNIK, G.F.

TITLE:

On the Hydraulic Resistance in the Case of Turbulent Nonisothermal Movement of Liquids in Tubes. (K voprosu o gidravlicheskom soprotivlenii pri turbulentnom neizotermicheskom dvizhenii zhidkosti v trubakh, Russian)

PERIODICAL:

Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 5, pp 1095 - 1099 (U.S.S.R.)

ABSTRACT:

The formulae available showed contradictory results, and experimental data comprise the modifications of the physical characteristic values only within narrow limits. For this reason the department for theoretical bases of heat technology at the Moscow Institute for Energetics carried out new tests for the measurement of the hydraulic resistance in round tubes in the case of the motion of two oils (MS- and transformer oil) and water under conditions marked by an essential modification of viscosity with temperature. The experiments were carried out in such a manner that the influence of input effects was excluded. It was shown that with cooling of the liquid (in contrast to its heating) the exponent  $n$  and therefore also  $\xi$  depends essentially on  $Pr_F$ . Further analysis showed that the relation can be expressed by

$$n = 0.28 Pr_F^{-\frac{1}{4}}$$

For the resistance coefficient in the case of a turbulent non-

Card 1/2

On the Hydraulic Resistance in the Case of PA - 3565  
Turbulent Nonisothermal Movement of Liquids in Tubes.

isothermal motion of a noncompressible (dropshaped) liquid in smooth tubes the following formula is recommended:

$$\xi = \frac{1}{(1.82 \lg Re_F - 1.64)^2} \left( \frac{\mu_W}{\mu_F} \right)^n,$$

where  $n = 0.14$  when the liquid is heated and  $n = 0.28 Pr_F^{-1/4}$  when it is cooled. The indices "F" and "W" mean that the physical characteristic values were selected for the average temperature of the liquid and for the wall temperature respectively. It is shown that this formula can be used also for an approximated determination of  $\xi$  in the cases of motions of liquids in tubes with an unround cross section, in which case  $Re_F$  is determined according to an equivalent diameter. (With 2 illustrations, 1 table, and 4 Slavic references)

ASSOCIATION: Moscow Institute for Energetics "V.N.Molotov"  
PRESENTED BY:  
SUBMITTED: 27.8.1956  
AVAILABLE: Library of Congress

Card 2/2

SOV/96-58-8-9/22

**AUTHORS:** Meshchaninov, I.A. and Muchnik, G.F. (Engineers)

**TITLE:** Temperature Irregularities in High-pressure Boiler Drums and Methods of Reducing them (Temperaturnyye neravnomernosti v barabanakh kotlov vysokogo davleniya i oor'ba s nimi)

**PERIODICAL:** Teploenergetika, 1958, Nr 8, pp 44-48 (USSR)

**ABSTRACT:** Non-uniform temperature distribution in the drums of high-pressure boilers is considered. The temperature-drops that occur in the thickness of the wall during uniform change of temperature are regarded as consisting of three components: one depends only on the rate of change of temperature of the medium; another characterises the rate of temperature equalisation across the thickness of the wall; the third is the thermal shock component. The temperature distribution in the wall thickness is usually parabolic. Calculated and measured values of temperature in the drum wall of a boiler type TP-170 are plotted in Fig 1. The way in which the temperature-drop in the drum wall changes during the process of raising steam is then considered. The saturation temperature changes much more rapidly in the

Card 1/5

SOV/96-58-2-2/22

Temperature Irregularities in High-Pressure Boiler Drums and  
Methods of Reducing them

pressure range 1 - 5 atms than at pressures above 5 atms. Therefore, quite a small pressure-increase soon after starting up the boiler causes a sharp rise of saturation temperature and the rate of change of temperature may reach 500°C per hour. This can give rise to very uneven temperature distribution in the drum walls. The temperature distribution is usually much more uniform when the boiler is being cooled down. However, rather special cooling conditions arise in the separating drums of boilers types TP-170 and TP-230. It is usually supposed that water leaves the separating drum immediately after the boiler is shut down, but in fact the lower part of the drum cools more rapidly than the upper. Formulae are given for calculating the stresses in boiler drum walls that arise from non-uniform temperature distribution. Numerical examples of stress calculations are shown. These indicate that even though the methods of stress calculation make no special allowance for local stress concentrations or specially thick parts of the wall, the stresses obtained are of the order permitted by

Card 2/5

SOV/96-58-8-9/22

Temperature Irregularities in High-Pressure Boiler Drums and  
Methods of Reducing them

the standard. It is, therefore, desirable to seek ways of achieving a uniform temperature distribution. ORGRES developed several measures intended to make the temperature distribution more uniform, and tried them on a boiler type TP-170 in a power station of the Moscow System. The effectiveness of the measures was assessed by 54 thermocouples installed at various places in the boiler. To make the temperature more uniform in the main drum during the process of raising steam, the lower parts of the drum were steam-heated by an arrangement illustrated diagrammatically in Fig 2. The steam used for this purpose was super-heated at a pressure of 100 - 110 atms and came from the neighbouring boiler after first reducing the pressure to 50 - 60 atms. The steam-heating equipment, which is briefly described, was started up before the burners were lit and shut down when the pressure in the boiler reached 60 atms. The maximum heating effect was obtained with a steam consumption of 4 - 5 tons/hour.

Card 3/5

SOV/96-58-8-9/22

Temperature Irregularities in High-Pressure Boiler Drums and  
Methods of Reducing them

Graphs of temperature change in the walls of the main drum during the process of raising steam, with the application of steam-heating and without it, are seen in Fig 3. With steam-heating there was practically no temperature difference between different parts of the drum, and the temperature-drop in the wall thickness was reduced to 10 - 15°C. Steam-heating of the main drum had little effect on the temperature distribution in the separating drum, where heating conditions are governed by circulation in the pipes. To prevent temperature irregularities from occurring during shut-down, the drums were filled with water soon after the fire was extinguished and the boiler was disconnected from the steam line. Some practical difficulties were met in carrying this out. The method of controlling the water level is illustrated diagrammatically in Fig 4. It will be seen from the curves in Fig 5 that filling with water in this way reduced the temperature differences and also made it possible to maintain the heat of the drums for a considerable period,

Card 4/5

SOV/96-58-8-9/22  
Temperature Irregularities in High-Pressure Boiler Drums and  
Methods of Reducing them

which is very important when the boilers are kept in hot reserve. It was not always easy to check that the drums were full of water; the difficulties encountered in this respect are specific to boilers with separating drums when there is not much difference between the height of the top of this drum and the highest point of the steam-raising tube.

There are 5 figures and 2 literature references (Soviet)

ASSOCIATION: ORGRES

1. Boilers--Temperature factors
2. Boilers--Pressure
3. Temperature--Theory

Card 5/5

MESHCHANINOV, I.A., insh.; MUCHNIK, G.F., insh.; RAYEV, B.Kh., insh.

Conditions for the transfer of boilers from operating to stand-by  
basis. Elek. sta. 30 no.2:11-14 P '59. (MIRA 12:3)  
(Boilers)



84319

S/170/60/003/009/014/020X  
B019/B060

24.5200 1543, 1498, 1164

AUTHOR:

Muchnik, G. F.

TITLE:

Determination of the Heat Exchange Coefficient in the  
Quasisteady Operation 7

PERIODICAL:

Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 9,  
pp. 83-85

TEXT: From solution (2) of the heat conduction equation for an infinitely long hollow cylinder with no heat exchange externally and the boundary condition (1) being satisfied inside, the author obtained the following formula for the heat exchange coefficient:

$$\alpha = \lambda \frac{1}{r_1 \{ \ln \beta^2 - \ln(\beta^2 - 1) - 0.5 \}} \cdot \frac{\Delta t}{\delta t} \quad (4)$$

Here,  $\delta t = t_{med} - t_i$ ,  $t_{med}$  being the temperature of the medium inside the tube, and  $t_i$  the temperature of the inner cylinder wall.  $\beta$  is the

Card 1/2

Determination of the Heat Exchange Coefficient  
in the Quasisteady Operation

84319

S/170/60/003/009/014/020X

B019/B060

ratio of the external to internal cylinder diameter. Thus, to determine the heat exchange coefficient it is only necessary to know the temperature gradient medium-inner tube surface and that in the cylinder wall. When further assuming the heat conduction coefficient  $\lambda = \text{const}$ , one obtains:  $\alpha = k\Delta t/\delta t$  (5). These relations were verified experimentally. Fig. 1 shows values of the coefficient at various pressures in vapor condensation, that were calculated by (4). The same diagram contains a curve drawn after a formula by V. D. Popov (Ref. 4). The deviation of experimental values calculated with (4) from the theoretical curve at low pressures (below 10 atm) is explained with the nonfulfillment of the premises in this pressure range, as were included in Popov's derivation. Popov studied the condensation of pure vapor. There are 1 figure, 1 table, and 5 Soviet references.

SUBMITTED: December 17, 1959

Card 2/2

MESHCHANINOV, I.A., Inzh., MUCHNIK, G.F., inzh.

Warming up of high-pressure boiler steampipes. Elek. sta. 31  
no. 3:8-10 Mr '60. (MIRA 13:8)

(Boilers) (Steampipes)

MESECHANINOV, I.A., inzh.; MUCHNIK, G.F., inzh.

Quick starting of high-pressure drum boilers. Elek.sta.  
31 no.4:10-16 Ap '60. (MIRA 13:7)  
(Boilers)

MUCHNIK, G. F. Cand Tech Sci -- "Study of temperature fields in thick-walled  
boiler elements <sup>under</sup> transient <sup>regime</sup> behavior." Mos, 1961 ( Min of Higher and Secondary  
Specialized Education RSFSR. Mos Order of Lenin Power Engineering Inst).  
(KL, 4-61, 198)

218  
- - -

MUCHNIK, G. F.

" Solution of thermal conductivity problems by the method of "networks."

Report presented at the 1st All-Union Conference on Heat- and Mass-Exchange, Minsk, BSSR, 5-9 June 1961.

89928

S/170/61/004/003/006/013  
B117/E209

10.9200  
11.9100  
AUTHOR:

Muchnik, G. F.

TITLE:

Solution of heat conduction problems by the network method

PERIODICAL:

Inzhenerno-fizicheskiy zhurnal, v. 4, no. 3, 1961, 72-82

TEXT: The author deals with the solution of heat conduction problems by means of the network method. In this method, temperature at any point is expressed by its limit and by connective coefficients, "weights", which account for a connection between any point of the region concerned and the boundary points. The values of the "weights" are independent of the boundary conditions. The problem consists in finding these "weights" which can be determined most easily by the method of finite differences. Many textbooks devoted to the estimation of an exact solution of finite differences are available. Various combinations were obtained for determining the connection of the sought point with the nearest neighbor. For the heat conduction equation, e. g., the following combinations are possible (Fig. 1):  
 $T_A = (T_1 + T_2)/2$  at a step ratio of  $\Delta \tau = \Delta x^2/2a$ ;  $T_A = (T_1 + T_0 + T_2)/3$  at  $\Delta \tau = \Delta x^2/4a$

89928

S/170/61/004/003/006/013  
B117/B209

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Solution of heat ...

$\Delta T = \Delta x^2 / 3a$ , etc., or, in a general form:  $T_A = [T_1 + (p - 2)T_0 + T_2] / p$ , where  $p = \Delta x^2 / a\Delta \tau$ . All these solutions connect sites in the micro-region with one another. This means that N operations must be performed in order to determine successively the function at any point distant from the boundaries. In the present paper this method is applied to the macro-region by determining direct connections of the point A with the boundaries without performing any intermediate steps. This method was employed in solving heat conduction equations for a semi-bounded rod, for an unbounded plate, for a cylinder, and for a sphere. In general, the method of finite differences allows to solve problems for only integer periods ( $m = 1, 2, 3$ , etc.). In a number of cases, however, it is possible to go over from integer values to intermediate values. By expressing the differential equations and the boundary conditions by finite differences, a dependence for a finite number  $m$  of periods is obtained from this construction. When this dependence can be formulated analytically, then it is extrapolated for any  $m$ , i. e. for any given instance of time. The relationship between  $m$  and the time is determined from the formula  $m = 2N^2 Fo$ ,  $Fo = m / 3n^2$ . The solution may be obtained in two ways: 1) At  $N = \text{const}$  the relationship between  $m$  and  $Fo$  is

Card 2/4



89928

S/170/61/004/003/006/013  
B117/B209

Solution of heat ...

determined; 2) at  $m = \text{const}$  the relationship between  $N$  and  $F_0$  is sought. In addition, the author points out the fact that the described method can be employed in solving two-dimensional problems. In that case it is suitable to choose  $\Delta x = \Delta y$ . Then, at  $\Delta \tau = \Delta x^2 / pa = \Delta y^2 / pa$  and  $p = 4$ , relation (12) holds:  $t_{x,y,m+1} = \frac{1}{4} [t_{x-1,m} + t_{x+1,m} + t_{y-1,m} + t_{y+1,m}]$ . In further advance as in the case of a plane problem when function (12) is expanded to the boundaries, a spatial structure forms, consisting of a number of subsequent pyramids. The solution becomes simplified by projecting these pyramids upon a plane. For the solution of arbitrary problems simple computers may be devised in which the "order" is given to the boundary cells. However, the result is obtained as a sum of the "orders" accounting for the "weight" of the boundary cells at any point in the field. There are 4 figures, 3 tables, and 10 references: 8 Soviet-bloc.

ASSOCIATION: Gosudarstvennyy trest po organizatsii i ratsionalizatsii rayonnykh elektrostantsiy i setey, g. Moskva (State Trust for the Organization and Rationalization of Rayon Electric Power

Card 3/4

Solution of heat ...

S/170/61/004/003/006/013  
B117/B209

Plants and Networks, Moscow)

SUBMITTED: August 8, 1960

Card 4/4

LIPOVTSSEV, L.Ya., inzh.; LOSHAK, O.B., inzh.; KAMBI OV, I.I., inzh.,  
BROJENIK, G.F., inzh.

First results of the operation of a 200 Kw. boiler-turbine unit.  
Teploenergetika 8 no.8:41-47 Ag '61. (LIRA 14:10)

1. Gosudarstvennyy trest po organizatsii i ratsionalizatsii  
elektrostantsiy.

(Boilers)

(Steam turbines)

KAS'YANOV, L.N., inzh.; LIPOVTSOV, L.Ya., inzh.; LOSHAK, S.B., inzh.  
RAYEV, B.Kh., inzh.; GIBERMAN, G.A., inzh.; MUKHOMOV, G.P.,  
kand.techn.nauk

Load drop on the 200 kw. unit with subsequent loading.  
Toploenergetika 8 no.1944-49 0 '61. (Sov. Engrg)

1. Gosudarstvennyy trest po organizatsii i ratsionalizatsii  
elektrostantsiy i Zmiyevskaya gosudarstvennaya rayonnaya  
elektricheskaya stantsiya.  
(Steam turbines--Testing)

MESHCHANINOV, I.A., inzh.; MUCHNIK, G.F., inzh.; RAYEV, B.Kh., inzh.

Operation of TP-230 boilers with decreased loads. Elek.sta. 32  
no.4:10-14 Ap '61. (MIRA 14:7)

(Boilers)

43353  
S/170/62/005/012/006/008  
B104/B186

76.5100

AUTHORS:

Muchnik, G. F., Zaydenman, I. A.

TITLE:

Unsteady-state heat conduction in multilayer media.  
I. General solutions for plane systems

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 5, no. 12, 1962, 71 - 76

TEXT: The heating of two multilayer systems by an internal heat source is investigated. In the first system a single sequence of plates (Fig. 1 a) is bounded by adiabatic walls. The second system (Fig. 2 b) consists of repeating sequences of plates. The solution to the heat equation for a constant initial temperature  $t_0$  is written in the form

$$T(x, s) - \frac{t_0}{s} = A \operatorname{ch} \left( \frac{s}{a} \right)^{\frac{1}{2}} x + B \operatorname{sh} \left( \frac{s}{a} \right)^{\frac{1}{2}} x. \quad (2)$$

the first derivative with respect to  $x$  is

$$T'(x, s) = A \left( \frac{s}{a} \right)^{\frac{1}{2}} \operatorname{sh} \left( \frac{s}{a} \right)^{\frac{1}{2}} x + B \left( \frac{s}{a} \right)^{\frac{1}{2}} \operatorname{ch} \left( \frac{s}{a} \right)^{\frac{1}{2}} x. \quad (2 a).$$

S/170/62/005/012/006/008  
B104/B186

Unsteady-state heat conduction in ...

for the interfaces between the first and the second and between the second and the third layer is obtained with the aid of the designations

$$\operatorname{ch}\left(\frac{s}{a_n}\right)^{1/2} \cdot x_n = \operatorname{ch}_{nn} \quad \text{and} \quad \operatorname{ch}\left(\frac{s}{a_{n+1}}\right)^{1/2} \cdot x_n = \operatorname{ch}_{n+1,n} \quad \text{by substituting (2)}$$

and (2 a) into (3) and (3 a).

$$B_1 = 0, \quad (4)$$

$$A_n \left(\frac{s}{a_n}\right)^{1/2} \operatorname{sh}_{nn} + B_n \left(\frac{s}{a_n}\right)^{1/2} \operatorname{ch}_{nn} = 0. \quad (4 a)$$

holds for the left-hand side of plate 1. For the second system the conditions analogous to (3) and (3 a) are

$$A_1 + \frac{t_0}{s} = A_n \operatorname{ch}_{nn} + B_n \operatorname{sh}_{nn}, \quad (4 b)$$

and

$$B_1 \left(\frac{s}{a_1}\right)^{1/2} = \frac{\lambda_1}{\lambda_n} \left[ A_n \left(\frac{s}{a_n}\right)^{1/2} \operatorname{sh}_{nn} + B_n \left(\frac{s}{a_n}\right)^{1/2} \operatorname{ch}_{nn} \right]. \quad (4 b)$$

Increasing the number of layers has no effect on the structure of the determinant used to calculate the quantities  $A_1$  and  $B_1$ , nor any effect on

Card 3/5

Unsteady-state heat conduction in ...

S/170/62/005/012/006/008  
B104/B186

the numerical values of its elements. In the characteristic equation the coefficients  $k_r$  of  $A_i$  and  $B_i$  are functions of  $s$ :  $k_r = f(s)$ . The solution (2) can be reduced to a polynomial in  $s$ . Furthermore the equation of heat conduction of the  $n$ -th layer can be written in the form

$$t(x_n, a_n) = t_{\text{kon}} + \sum_{m=1}^{\infty} \frac{D_{A_n}(s_m) \exp s_m \tau}{D'(s_m)} \operatorname{ch} \left( \frac{s_m}{a_n} \right)^{\frac{1}{2}} x + \sum_{m=1}^{\infty} \frac{D_{B_n}(s_m) \exp s_m \tau}{D'(s_m)} \operatorname{sh} \left( \frac{s_m}{a_n} \right)^{\frac{1}{2}} x, \quad (6)$$

where  $D$  is the characteristic determinant and  $s_m$  are the roots of  $D(s) = 0$ .

Finally, it is shown that the problem of unsteady-state heat conduction in plane multilayer systems with boundary conditions of the first, second and third kind can be solved by analogous methods. There are 2 figures and 1 table.

SUBMITTED: February 12, 1962

Card 4/5

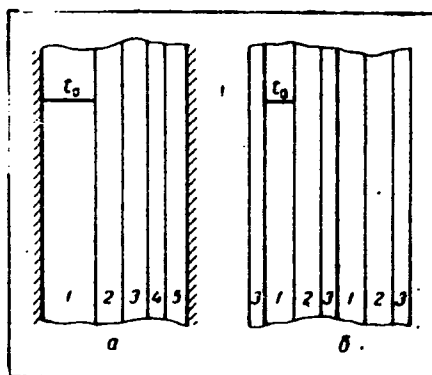


Unsteady-state heat conduction in ...

S/170/62/005/012/006/008  
B104/B186

Fig. 1. Multilayer media

Fig. 1



Card 5/5

MEYEROVICH, I.G. (Moskva); MUCHNIK, G.F. (Moskva)

Nonsteady-state temperature field in multilayer systems.

Teplofiz. vys. temp. 1 no.2:291-298 S-O'63. (MIRA 17:5)

S/170/63/006/002/010/018  
B102/B186

104 100

AUTHORS: Zaydenman, I. A., Muchnik, G. F.

TITLE: Non-stationary thermal conductivity in multi-layered media.  
II. A two-layered system and the determination of the  
minimum duration for the heating of systems of given thermal  
capacity

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 2, 1963, 75 - 81

TEXT: A general method of solving the thermal conductivity problem in multi-layered media is given in Part I of this paper and is used to determine and analyze the temperature field in a two-layered system. It is assumed that this system is surrounded by adiabatic walls and that one of the two layers contains a thermal source. The solution is used to solve a certain boundary value problem, which consists in determining the shortest time required for a layer to absorb a certain quantity of heat when that layer is brought in contact with a body "equivalent" to the sum of the rest layers having the same thermal capacity as the second layer but infinite thermal conductivity. The contact here is assumed to be ideal. It is found that

Card 1/2

✓B

Non-stationary thermal conductivity...

S/170/63/006/002/010/018  
B102/B186

$$\tau_{\min} = - \frac{2.303 \lg |\Theta/\varphi(\mu_1)|}{\mu_1^2 a_1} \delta_1^2, \quad (12)$$

(12),

$$\varphi(\mu_1) = \frac{2 \cos \mu_1}{-\mu_1 \sin \mu_1 + \cos \mu_1 \cdot (1 + c_1 \delta_1 / c_2 \delta_2)}$$

✓B

and in case the thermal capacity of the first layer,  $c_1 \delta_1$ , is constant

$$\tau_{\min} = - \frac{2.303 \lg |\Theta/\varphi(\mu_1)|}{\mu_1^2} \frac{(c_1 \delta_1) \delta_1}{\lambda_1} = b \frac{\delta_1}{\lambda_1},$$

$\Theta$  is a dimensionless temperature,  $\Theta = (t_{\text{fin}} - t)/t_0$ ,  $t_{\text{fin}}$  is the final temperature of the system,  $\mu_1$  are the roots of the characteristic equation,  $\delta_1$  the layer thicknesses,  $\lambda_1$  the heat conduction coefficients and  $c_1$  the specific heats. Results of numerical calculations are given. There are 4 figures and 1 table.

SUBMITTED: September 15, 1962

Card 2/2

S/170/63/006/003/010/014  
B104/B186

265000

AUTHORS: Muchnik, G. F., Zaydenman, I. A.

TITLE: Non-stationary heat transfer in multi-layered media  
III. Three-layered and four-layered systems

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 3, 1963, 86 - 94

TEXT: A method described in part I and applied to investigating a two-layered system in part II, is extended to adiabatic systems of three or four layers with initial disturbances caused by instantaneous heat sources on the first layer surface is solved by a method described in part I [Abstracter's note: no references to parts I and II given]. In the case of a three-layered system the equations

$$\frac{\partial u_1}{\partial \tau} = a_1 \frac{\partial^2 u_1}{\partial x^2}; \quad \frac{\partial u_2}{\partial \tau} = a_2 \frac{\partial^2 u_2}{\partial x^2}; \quad \frac{\partial u_3}{\partial \tau} = a_3 \frac{\partial^2 u_3}{\partial x^2} \quad (A),$$

the boundary conditions

$$\lambda_1 \frac{\partial u_1}{\partial x} \Big|_{x=0} = 0; \quad u_1|_{x=x_1} = u_2|_{x=x_1}; \quad \frac{\partial u_1}{\partial x} \Big|_{x=x_1} = \frac{\lambda_2}{\lambda_1} \frac{\partial u_2}{\partial x} \Big|_{x=x_1}; \quad (B)$$

Card 1/4

S/170/63/006/003/010/014  
B104/B186

Non-stationary heat transfer...

$$t_2|_{x=x_1} = t_3|_{x=x_1}; \quad \frac{\partial t_2}{\partial x}|_{x=x_1} = \frac{\lambda_3}{\lambda_2} \frac{\partial t_3}{\partial x}|_{x=x_1}; \quad \lambda_3 \frac{\partial t_3}{\partial x}|_{x=x_2} = 0 \quad (B)$$

and the initial conditions  $t_1(0, x) = t_0$ ;  $t_2(0, x) = t_3(0, x) = 0$  are derived by the part-I method. The solutions for the single plates are

$$t_1 = t_{\text{KOH}} + t_0 \sum_{n=1}^{\infty} \frac{(A_1 \cos_1 \sin_3 + A_3 \sin_2 \cos_3) \cos_1 x}{\bar{\varphi}_n} \exp(-\mu_n^2 \tau) \quad (1.5)$$

$$t_2 = t_{\text{KOH}} + t_0 \sum_{n=1}^{\infty} \frac{(A_2 \sin_1 \sin_2 \sin_3 (3-x) - A_3 \sin_1 \cos_2 \cos_3 (2-x))}{\bar{\varphi}_n} \exp(-\mu_n^2 \tau) \quad (1.6)$$

$$t_3 = t_{\text{KOH}} - t_0 \sum_{n=1}^{\infty} \frac{A_n \sin_1 \cos_3 (3-x)}{\bar{\varphi}_n} \exp(-\mu_n^2 \tau).$$

The physical properties of a three-layered system are calculated (Table 1) and the similarity condition  $c_2 \lambda_2 / c_3 \lambda_3 = 1$  is obtained. For such similar

Card 2/4

Non-stationary heat transfer ...

S/170/63/006/003/010/014  
B104/B186

systems the character of temperature variation of the right side of (18) does not depend on the location of the second and third layer. A four-layered system is investigated analogously. The physical properties are given in table 3. There are 4 figures and 3 tables.

SUBMITTED: September 15, 1962

Legends to the Tables: (1) thickness  $\delta_1$  in meter; (2) specific heat,  $c_1$  in Joule/m<sup>3</sup>·degree; (3) Heat transfer coefficient  $\lambda_1$  in watt/m·degree; (4) thermal diffusivity  $a_1$  in m<sup>2</sup>/sec. /12

Table 1

Card 3/4

GORDON, A.R. (Moskva); MUCHNIK, G.F. (Moskva)

Determining the integral degree of blackness of metals as dependent  
on the degree of surface roughness. Teplofiz. vys. temp. 2 no.2:292-  
294 Mr- Ap '64. (MIRA 17:6)



MUCHNIK, G.F. (Moskva); POLYAKOV, Yu.A. (Moskva)

Biot's variational method in heat transfer problems with variable  
boundary conditions. Teplofiz. vys. temp. 2 no.3:424-428 My-Je '64.  
(MIRA 17:8)

S/0294/64/002/004/0562/0564

ACCESSION NR: AP4044523

AUTHORS: Gordon, A. R. (Moscow); Muohnik, G. F. (Moscow)

TITLE: Determination of the integral degree of blackness of niobium in relation to the degree of surface roughness

SOURCE: Teplofizika vy\*sokikh temperatur, v. 2, no. 4, 1964, 562-564, and insert facing p. 564

TOPIC TAGS: niobium, surface roughness, thermal deformation, metal surface

ABSTRACT: The authors performed tests to determine the degree of surface blackness of niobium in the temperature interval 1200-2000K. Five test specimens were taken from the same material (99.26% pure niobium by weight) and were formed into pipes 390 mm in length, with an outer diameter of 9 mm and 0.5 mm of wall thickness. These specimens were treated to produce degrees of surface roughening ranging from "polished" to coarse. Data on the surface profiles used are presented, including absolute roughness "heights" and statistical deviations. Observations of roughness were made and plotted for heating and for subsequent cooling. It was found that differences in roughness curves for heating and cooling of a specimen are likely consequences of oxide formation during early stages of heating and subsequent oxide removal during later stages. Additional experiments were performed to measure

Card 1/2

ACCESSION NR: AP4044523

absorption qualities of tempered niobium relative to oxygen content of the air. Heated specimens were placed in a vacuum chamber and allowed to cool while observations of pressure within the chamber were made at selected times. It was concluded that a tempered specimen absorbs oxygen after cooling very slowly. A table is presented summarizing test results along with test error data. Reference is made to similar work by V. A. Petrov, V. Ya. Chekhovskoy and A. Ye. Sheyndlin (Teplofizika vy\*sokikh temperatur, 1, No. 3, 462, 1963) and earlier work by the authors on molybdenum (Teplofizika vy\*sokikh temperatur, 2, No. 2, 292, 1964). Orig. art. has: 2 tables and 4 figures.

ASSOCIATION: none

SUBMITTED: 01Apr64

ENCL: 00

SUB CODE: MM

NO REF SOV: 002

OTHER: 001

Card 2/2

L 62190-65 EWT(1)/T/EEC(b)-2 En-4/P1-4 IJP(c)  
 ACCESSION NR: AP5010473 UR/0294/65/003/002/0307/0314  
 535.346.1.001.24

AUTHORS: Gordon, A. R. (Moscow); Muchnik, G. P. (Moscow) 24  
 B

TITLE: Determination of the integral degree of blackness of  
 surfaces with microscopic roughnesses

SOURCE: Teplofizika vysokikh temperatur, v. 3, no. 2, 1965,  
 307-314

TOPIC TAGS: surface finish, reflectivity, black body radiation, in-  
 tegral blackness, temperature dependence 1

ABSTRACT: This is a continuation of earlier papers by the authors  
 (Teplofizika vysokikh temperatur v. 2, no. 2, 292, 1964 and no. 4,  
 1964) dealing with radiation from rough surfaces in which the dimen-  
 sions of the rough spots are commensurate with the wavelength of the  
 light. The present paper deals with the case when the roughness  
 dimension is much larger than the wavelength of light, and a classical  
 optics approach can be used. The concrete type of surface considered

Card 1/2

L 62190-65

ACCESSION NR: AP5010473

in this article is that of a serrated flat surface such as produced by a milling cutter. Serrations with various profiles are considered. A formula is derived for the radiation energy as a function of the angle subtended by the serration surface and is found to be in good agreement with experimental data obtained for two samples. The degree of blackness of the material and its variation with temperature are then obtained for these samples using the results of the earlier paper. Original article has: 8 figures, 15 formulas, and 2 tables

ASSOCIATION: None

SUBMITTED: 10Jul64

ENCL: 00

SUB CODE: OP,TD

NR REF SOV: 004

OTHER: 002

Card

2/2

L 10939-67 EWT(d)/EWP(1) IJP(c) BD/GG/GD

ACC NR: AT6022291

SOURCE CODE: UR/0000/66/000/000/0039/0044

AUTHOR: Bushara, I. V.; Kobrinskaya, O. Ya.; Muchnik, I. B. 39

ORG: none

TITLE: An approach to the study of <sup>160</sup>visual image formation processes

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya bioniki. Doklady. Moscow, 1966, 39-44 and pages 123-124

TOPIC TAGS: bionics, model, vision, perception, pattern recognition

ABSTRACT: Although perception is a classic problem of psychology, it has been only recently simulated, particularly in connection with visual observations. Among the various approaches, the one due to E. M. Braverman (Avtomatika i telemekhanika, 1962, t. 23, No. 3) is connected with the compactness hypothesis. The paper presents a brief outline of this compactness hypothesis, and on the basis of 24 Soviet and foreign references it surveys the advances in this field of simulating visual image perception.

SUB CODE: 06/ SUBM DATE: 08Apr66/ ORIG REF: 011/ OTH REF: 013

Card 1/1 <sup>67</sup>

ACCESSION NR: AP4036512

S/0103/64/025/005/0692/0695

AUTHOR: Bashkirov, O. A. (Moscow); Braverman, E. M. (Moscow);  
Muchnik, I. B. (Moscow)

TITLE: Algorithms for teaching recognition of visual patterns based on potential functions

SOURCE: Avtomatika i telemekhanika, v. 25, no. 5, 1964, 692-695

TOPIC TAGS: pattern recognition, visual pattern, pattern recognition theory

ABSTRACT: The algorithms are based on a hypothesis of compactness of simple visual patterns. Simple and improved potential algorithms are discussed. A standard function -- potential -- is connected with every point of the receptor space which appears in the teaching process; the potential is maximum at the point in question and decreases in all directions from that point; thus, the point can be considered as a "source of potential" in the receptor space. This formula for the

potential describes the situation:  $\varphi(R) = \frac{1}{1 + \alpha R^2}$ , where  $\alpha$  is a coefficient determining the rate of decrease of potential, R is the distance between the source and

Card 1/2

ACCESSION NR: AP4036512

the point in question. If the potential is generated by the points which appeared as a result of teaching and correspond to one pattern, the pattern potential will be given by:

$$\Phi_{\beta}(y) = \frac{1}{N_{\beta}} \sum_{i=1}^{N_{\beta}} \varphi[R(x_i^{\beta}, y)] \quad (\beta = 1, 2, \dots, n),$$

where  $\beta$  is the pattern number,  $x_i^{\beta}$  are the points corresponding to the samples of this pattern which appeared as a result of teaching,  $N_{\beta}$  is the number of such samples,  $n$  is the number of pattern taught to the machine. In the improved algorithm, the distribution of points learned by the machine is made more uniform. Rare and close to neighbors points are given a greater weight. This increases the potentials in the areas where the density of points is low, enhancing the reliability of recognition. Results of some experiments are reported. Orig. art. has: 3 figures, 3 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED: 15Oct63

DATE ACQ: 03Jun64

ENCL: 00

SUB CODE: DP

NO REF SOV: 001

OTHER: 000

ard 2/2



L 46101-66 EWT(d)/T/EWP(1) IJP(c) BB/GG/GD/JXT(CZ)  
ACC NR: AT6022679 SOURCE CODE: UR/0000/66/000/000/0108/0112

AUTHOR: Kobrinskaya, S. Ya.; Kolesova, I. V.; Kuchina, Ye. V.; Muchnik, I. B.

ORG: none

TITLE: Experiments on the differentiation of groups of compact images

SOURCE: Moscow. Institut avtomatiki i telemekhaniki. Samoobuchayushchiyesya avtomaticheskiye sistemy (Self-instructing automatic systems). Moscow, Izd-vo Nauka, 1966, 108-112

TOPIC TAGS: optic image, pattern recognition

ABSTRACT: The results of image perception experiments on animals and humans, conducted by the Biocybernetics Laboratory of the Institute im. Vishnevskiy and Laboratory No. 25 of the Institute of Automation and Telemekhanics are described. In tests on both animals and humans, inkblot cards with various images were used. The animals were placed on a laboratory rig (similar to that developed by Sutherland) and confronted with a choice of one of two cards from groups A and B. The selection of inkblot cards from group A was the approved response; upon selecting group B, the animal was punished with an electric shock. Results on conditioned response and differential learning rates are graphed. The human test subjects were confronted with 10 inkblots (5 from group A and 5 from group B) and instructed to divide the inkblot images into two groups according

Card 1/2

L 46191-66

ACC NR: AT6022679

to common features. The subjects were drawn from children of pre-school age through the eighth grade of secondary school. Test results for the various groups are graphed. The authors conclude that the sense of differentiating between two groups of compact images can be developed in both man and animals. Orig. art. has: 6 figures. [14]

SUB CODE: 05/      SUBM DATE: 02Mar66/      ORIG REF: 001/      ATD PRESS: 5085

Card 2/2

blg

*MUCHNIK, L.S.*

MUCHNIK, L.S.

Role of chronic infections in pathogenesis of schizophrenia [with summary in French]. Zhur.nevr. i psikh. 57 no.9:1085-1090 '57.

(MIRA 10:11)

1. Psikhiatricheskaya klinika (zav. - prof. V.K.Fedorov) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

(SCHIZOPHRENIA, etiology and pathogenesis,  
chronic infect. (Rus))

MUCHNIK, L. S.

AGGKEYEV, P.K., prof.; ANDREYEVA-GALANINA, Ye.TS., prof.; BASHENIN, V.A.,  
prof.; BENENSON, M.Ye., doktor med.nauk; VYSEGORODTSEVA, V.D.,  
prof.; JESSEN, A.I., dotsent; GUTKIN, A.Ya., prof.; ZEDANOV, D.A.,  
prof., laureat Stalinskoy premii; ZNAMENSKIY, V.F., prof.;  
KLIONSKIY, Ye.Ye., prof.; MONASTYRSKAYA, B.I., prof.; MOSKVIN,  
I.A., prof.; MUCHNIK, L.S., kand.med.nauk; PETROV-MASLAKOV, M.A.,  
prof.; RUBINOV, I.S., prof.; RYSS, S.M., prof.; SMIRNOV, A.V.,  
prof., zaslužennyy deyatel' nauki; TIKHOMIROV, P.Ye., prof.;  
TROITSKAYA, A.D., prof.; UDINTSEV, G.N., prof.; UFLYAND, Yu.M.,  
prof.; FEDOROV, V.K., prof.; KHILOV, K.L., prof., zaslužennyy  
deyatel' nauki; VADKOVSKAYA, Yu.V., prof.; MARSHAK, M.S., prof.;  
PETROV, M.A., kand.med.nauk; POSTNIKOVA, V.M., kand.med.nauk;  
RAPOPORT, K.A., kand.biolog.nauk; ROZENTUL, M.A., prof.; YANKE-  
LEVICH, Ye.I., kand.med.nauk; LYUDKOVSKAYA, N.I., tekhn.red.

[Book on health] Kniga o zdorov'e. Moskva, Gos.izd-vo med.lit-ry,  
Medgiz, 1959. 446 p. (MIRA 12:12)

1. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for  
Zhanov, Udintsev). 2. Leningradskiy sanitarno-gigiyenicheskiy me-  
ditsinskiy institut (for all, except Vadkovskaya, Marshak, Petrov,  
Postnikova, Rapoport, Rozentul, Yankelevich, Lyudkovskaya).  
(HYGIENE)

21,1200

21 (7)

AUTHOR: Muchnik, L. N.

68786

S/170/59/002/12/019/021

B014/B014

TITLE: A Simplified Method of Calculating a Pressurized-water Reactor /9

PERIODICAL: Inzhenerno-fizicheskiy zhurnal. 1959. Vol. 2, No. 12, pp 105-109 (USSR)

ABSTRACT: Calculation is simplified by applying nomograms which give a graphical representation of the dependences of the various parameters characterizing the active section and the coolant. Equation (1) describes the water temperature in the center of the reactor. The setting up of formula (7) for this temperature is discussed in detail. This formula was used to construct the nomogram shown in figure 1 in consideration of the three hydraulic pressures of 100, 150, and 200 atm. In conclusion, a reactor is calculated by way of an example by the application of the nomogram of figure 2 for determining the constant  $F_{rt}$ , which depends on the pressure and temperature of water in the center. There are 2 figures and 3 Soviet references. ✓

ASSOCIATION: Institut kompleksnykh transportnykh problem AN SSSR, g. Moskva  
(Institute for Comprehensive Transport Problems of the AS USSR,  
Card 1/1 City of Moscow)

MUCHNIK, L.S.; SHAPIRO, A.I.

Materials for a study and comparative evaluation of the immunobiological reactivity of the body in schizophrenia and protracted infectious psychoses. Sbor. trud. Len. nauchn. ob-va nevr. i psikh. no.6:207-216 '59. (MIRA 13:12)

1. Iz kafedry psikhiiatrii (zav. s prof. V.K. Fedorov) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta i serologicheskoy laboratorii (zav. - prof. A.I. Shapiro), Psikhonevrologicheskogo instituta imeni V.M. Bekhtereva (direktor - chlen-korrespondent Akademii pedagogicheskikh nauk RSFSR prof. V.N. Myasishchev).  
(PSYCHOSES) (IMMUNITY) (SCHIZOPHRENIA)

GHEZDON, J.Z.; GENKINA, F.B.; MILUSHIN, V.N.; MUCHNIK, L.S.

Comparative study of methods of evaluating the activity of  
smallpox vaccine. J. hyg. epidem. (Praha) 8 no.3:364-374 '64

1. Institute of Virus Preparations, Moscow.

ZAKS, O. V.; MUCHNIK, M. I. [Muchnyk, M. I.]

Some theoretical dependences in the process of two-stage  
saponification. Khar. prom. no.1:18-22 Ja-Mr '63.  
(MIRA 16:4)

1. Odesskiy proyektno-konstruktorskiy institut kompleksnoy  
avtomatizatsii proizvodstvennykh protsessov pishchevoy promysh-  
lennosti.

(Saponification) (Oils and fats)



ZAKS, A.V., inzh.; MUCHNIK, M.K., inzh.

Observations concerning ~~the~~ fundamental equation of statics of  
a vacuum chamber plant for the processing of soap stock.  
Masl.-zhir. prom. 29 no.10:17-19 0 '63. (MIRA 16:12)

1. Odesskiy proyektno-konstruktorskiy institut kompleksnoy  
avtomatizatsii proizvodstvennykh protsessov v pishchevoy  
promyshlennosti.

GUREVICH, A.A., inzh.; ZAKS, A.V., inzh.; KASPAROV, G.N., inzh.;  
MUCHNIK, M.M., inzh.

Automatic control of vacuum driers. Mekh. i avtom. proizv.  
18 no.10:37-38 0 '64. (MIRA 17:12)

MUCHIN, M.V.

"Deformity of the Face After Thermal Burns and Their Treatment," p. 40  
Military Medicine 1956

lecture delivered at a conference of Soviet military physicians at the  
Military Medical Academy im. S.M. Kirov, Leningrad, 29-October - 2 Nov 50.

*MUCHNIK N.L.*

YEGOROV, V.P., inzh.; MUCHNIK, N.L., inzh.

Improve the quality of road construction. Avt.dor. 20 no.7:2-3  
Jl '57. (MIRA 10:10)

(Road construction)

KAKULIN, G.P., inzh.; MUCHNIK, P.I., inzh.; NARTOVA, Ch.I., inzh.

Plastics for combination shaft linings in potash mines. Shakht.  
stroi. 8 no.46-7 Ap'64 (MIRA 17:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut organizatsii  
i mekhanizatsii shakhtnogo stroitel'stva.

MUCHNIK, P.Ya.

Raising the professional qualifications of physics teachers.  
Fiz. v shkole 14 no.3:69-72 My-Je '54. (MLRA 7:7)

1. Institut usovershenstvovaniya uchiteley Moldavskoy SSR.  
(Physics-- Study and teaching)

MUCHNIK, <sup>S</sup>G. F.

"Solution of Heat Conduction Problems by the Lattice Method."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR, June 1961.

Ca

12

Common Elements

Processes and Properties Index

The carcinolytic power of the blood serum and of extracts of organs of rats resistant to Jensen's sarcoma. S. B. Muchnik and M. Virgulit. *J. med., L'histoire* 9, 87-72 (in French 72) (1939). The blood serum and exts. of the liver and kidneys of rats resistant to Jensen's sarcoma have a higher carcinolytic power than those of normal rats and of rats with tumors. S. A. Karjala

OPEN

MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

BOOKS ONLY

PERIODICALS ONLY

BOOKS ONLY

PERIODICALS ONLY



1ST AND 2ND CIPHERS																										3RD AND 4TH CIPHERS																									
COMMON ELEMENTS																										PROCESSES AND PROPERTIES INDEX																									
<p><i>ca</i></p> <p><b>Morphological and functional properties of the elements of the active mesenchyme of rats resistant to Jensen's sarcoma. S. R. Muchnik. <i>Mol. exp.</i> (Ukraine) 1960, No. 1, 47-50; <i>Chem. Zvest.</i> 1960, II, 1980; cf. C. A. 34, 1382<sup>u</sup>.—With the aid of vital staining methods using trypan blue and Li carmine the mesenchymal properties of the various organs of sarcoma-resistant rats were studied. It was found that the absorptive capacity of the cells of the reticuloendothelial system for the vital stain was greater than that of normal animals or of animals having tumors. The same was true of the Fe content of the liver, spleen, skin and lymphatic glands of the expl. animals. Likewise, the relative wts. of the spleen and liver of the expl. animals differed from those of the corresponding organs of rats with expl. sarcoma and normal rats.</b></p> <p>M. G. Mironov</p>																										<p><i>11B</i></p>																									
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MUCHNIK, S.R.

MALINOVSKIY, A.A.; MUCHNIK, S.R.; VOINO-YASHENSKIY, V.V.

Discussion of critical considerations of prof. A.M.  
Zabludovskiy on tissue therapy. Vest. khir., Moskva  
73 no.6:53-59 Nov-Dec 1953. (CML 25:5)

1. Of the Ukrainian Experimental Institute of Eye Diseases  
imeni Academician V.P. Filatov (Director -- V.P. Filatov).

PUCHKOVSKAYA, N.A., doktor meditsinskikh nauk, redaktor; DEYNEKA, I.Ya., professor, redaktor; BARG, TS. M., starshyy nauchnyy sotrudnik, redaktor; BARKHASH, S.A., starshyy nauchnyy sotrudnik, redaktor; HUSENICH, D.G., starshyy nauchnyy sotrudnik, redaktor; VOYNO-YASHNETSKIY, V.V., kandidat meditsinskikh nauk, redaktor; DANCHENVA, L.D., kandidat meditsinskikh nauk, redaktor; DEYNEKA, I. Ya., professor, redaktor; KURYSHKIN, P.M., starshyy nauchnyy sotrudnik, redaktor; ~~MOSEVICH~~ S.R., doktor meditsinskikh nauk, redaktor; PUCHKOVSKAYA, N.A., doktor meditsinskikh nauk, redaktor; HUKIN, V.A., starshyy nauchnyy sotrudnik, redaktor; SYSOYEV, A.F., starshyy nauchnyy sotrudnik, redaktor

[Proceedings of the jubilee conference of the Ukrainian Filatov Experimental Institute of Eye Diseases and the Odessa Pirogov Medical Institute, held on May 25-28, 1955, and dedicated to the 80th birthday of Professor Vladimir Petrovich Filatov, Hero of Socialist Labor, Stalin Prize winner, active member of the Academy of Sciences of the U.S.S.R. and the Academy of Medical Sciences of the U.S.S.R., and Honored Scientist] Trudy iubileinoi nauchnoi konferentsii Ukrainetskogo eksperimental'nogo instituta glaznykh boleznei im. akad. V.P. Filatova i Odesskogo meditsinskogo instituta im. N.I. Pirogova, posviashchennoi 80-letiiu so dnia rozhdeniia Geroina Sotsialisticheskogo Truda, laureata Stalinskoi premii, deistvitel'nogo chlena Akademii nauk USSR i Akademii meditsinskikh nauk SSSR, zaslushennogo deiatelia nauki, professora Vladimira Petrovicha Filatova, 25-28 maia 1955 g. Kiev, Gos. med. izd-vo USSR, 1956. 302 p.

(MLRA 10:4)

1. Ukraine. Ministerstvo zdoravookhraneniya. (EYE-DISEASES)

MUCHNIK, S.R.; SYSOYEV, A.F.

Vladimir Petrovich Filatov. Zhur. ob. biol. 18 no.2:81-86  
Mr-Apr '57 (MIRA 10:5)  
(FILATOV, VLADIMIR PETROVICH, 1875-1956)  
(TISSUE EXTRACTS)

MUCHNIK, S.B.

Problem of the survival of isolated tissues in the works of  
Academician V.P. Filatov and his school [with summary in English]  
Zhur. ob. biol. 18 no.2:87-93 Mr-Apr '57 (MLBA 10:5)

1. Ukrainskiy nauchno-issledovatel'skiy eksperimental'nyy institut  
glasnykh bolezney i tkanevoy terapii im. akad. V.P. Filatova.  
(FILATOV, VLADIMIR PETROVICH, 1875-1956)  
(TISSUES)

MUCHNIK, S.R. (Odessa, ul. Didrikhsona, d. 9, kv.4)

Effect of subcutaneous injections of a placental tissue preparation  
on the growth of Brown-Pearce carcinoma. Vopr. onk. 9 no.4:75-78  
'63. (MIRA 17:9)

1. Iz laboratorii patologicheskoy fiziologii Ukrainskogo nauchno-  
issledovatel'skogo instituta glaznykh bolezney i tkanevoy terapii  
imeni akademika V.P.Filatova (dir. - chlen-korrespondent AMN SSSR  
Prof. N.A.Puchkovskaya).

MUCHNIK, S.R. (Odessa, ul. Didrikhsena, d.9, kv. 1)

Cytological analysis of refrigerated cornea [with summary in English].  
Arkh.anat.gist. i embr. 34 no.3:74-82 My-Je '57. (MLRA 10:10)

1. Iz Ukraineskogo eksperimental'nogo instituta glaznykh bolezney  
imeni akad. V.P.Filatova (dir. - akad. V.P.Filatov)  
(CORNEA, transpl.  
cytol. exam. of cornea preserved at low temperature (Mus))

MUCHNIK, S.P., starshiy nauchnyy sotrudnik; BARG, Ts.M., starshiy nauchnyy  
sotrudnik

The course of experimental keratitis following brain injury. Uch. zap.  
UNIGB 4:362-374 '58. (MIRA 12:6)

1. Ukrainskiy eksperimental'nyy institut glaznykh bolesney i tkanevoy  
terapii imeni akademika V.P. Filatova.  
(CORNEA--DISEASES) (BRAIN--WOUNDS AND INJURIES)



MUCHNIK, S.R., VOYNO-YASENETSKIY, V.V., BUSHMICH, D.G.

First All-Union Conference on Tissue Incompatibility and the Trans-  
plantation of Organs and Tissues. Oft.shur. 13 no.4:251-255 '58  
(MIRA 11:8)

(TRANSPLANTATION OF ORGANS, TISSUES, ETC.)

MUCHNIK, S.R., starshiy nauchnyy sotrudnik; SKORODINSKAYA, V.V., starshiy  
nauchnyy sotrudnik; SHCHERBINA, A.F., mladshiy nauchnyy sotrudnik

Metabolism in patients with marked myopia and deratoconus. Oft.  
zhur. 13 no.5:261-266 '58 (MIRA 11:10)

1. Iz laboratorii patologicheskoy fiziologii Ukrainskogo nauchno-  
issledovatel'skogo eksperimental'nogo instituta glaznykh bolezney  
i tkanevoy terapii im. akademika V.P. Filatova (direktor - prof.  
E.A. Puchkovskaya).

(METABOLISM)

(EYE---DISEASES DEFECTS)

**MUCHNIK, S.B.**, doktor med.nauk; **SYSOYEV, A.F.**, starshiy nauchnyy sotrudnik;  
**CHIKALO, I.I.**, starshiy nauchnyy sotrudnik; **SKORODINSKAYA, V.V.**,  
starshiy nauchnyy sotrudnik

New data on the theory and practice of tissue therapy. Oft.zhur.  
13 no.8:451-456 '58. (MIRA 12:2)

1. Iz Ukrainskogo nauchno-issledovatel'skogo eksperimental'nogo  
instituta glasnykh bolezney i tkanevoy terapii im. akad. V.P.  
Filatova (direktro - prof. N.A. Puchkovskaya).  
(TISSUE EXTRACTS)

PUCHKOVSKAYA, N.A.. prof.; MUCHNIK, S.R., doktor med.nauk; SHUL'GINA, N.S.,  
kand.biolog.nauk

Histologic and biochemical changes in the cornea after chemical  
and thermal burns. Oft.zhur. 14 no.4:202-208 '59.  
(MIRA 12:10)

1. Iz Ukrainskogo nauchno-issled.eksperimental'nogo instituta  
glasnykh bolezney i tkanevoy terapii im. akad.V.P.Filatova  
(direktor - prof.N.A.Puchkovskaya).  
(CORNEA--WOUNDS AND INJURIES) (BURNS AND SCALDS)

MUCHNIK, S.R., doktor med.nauk

Transplantation of tissues and organs. Priroda 49 no.10:16-20 0 '60.

1. Ukrainskiy nauchno-issledovatel'skiy eksperimental'nyy institut  
galznykh bolezney i tkanevoy terapii im. V.P.Filatova, Odessa.

(TRANSPLANTATION OF ORGANS, TISSUES, ETC.)

MUCHNIK, S.R., prof.

Lamellar transplantation of the cornea. Oft. zhur. 16 no.2:67-74  
'61. (MIRA 14:3)

1. Iz Ukrainskogo nauchno-issledovatel'skogo eksperimental'nogo  
instituta glaznykh bolezney i tkanevoy terapii imeni akademika  
V.P.Filatova (direktor - prof. N.A.Puchkovskaya).  
(CORNEA-TRANSPLANTATION)

MUCSNIYK, Ss.R. [Muchnik, S.R.]

Problems relating to the transportation of tissues and organs. Elet  
tud 16 no.16:487-490 16 Ap '61.

MUCHNIK, S.R., doktor med.nauk; SYSOYEV, A.G., starshiy nauchnyy sotrudnik;  
CHIKALO, I.I., starshiy nauchnyy sotrudnik; SKORODINSKAYA, V.V.  
(Odessa)

Present day achievements in tissue therapy. Vrach. delo no.5:  
151-154 My '62. (MIRA 15:6)

1. Ukrainskiy nauchno-issledovatel'skiy eksperimental'nyy  
institut glaznykh bolezney i tkanevoy terapii imeni akademika  
V.P. Filatova.

(TISSUE EXTRACTS)



MUCHNIK, S.R., prof.; SKORODINSKAYA, V.V., starshiy nauchnyy sotrudnik;  
SOLOV'YEVA, V.P.; SHCHASTNAYA, N.E.

State of certain functional systems of the organism in high  
myopia. Oft. zhur. 17 no.1:32-38 '62. (MIRA 15:3)

1. Iz Ukrainskogo nauchno-issledovatel'skogo eksperimental'nogo  
instituta glaznykh bolezney i tkanevoy terapii imeni akademika  
V.P. Pilatova (dir. - prof. N.A. Puchkovskaya).  
(MYOPIA)

L-20257-65 AMD

ACCESSION NR: AR4045779

S/0299/64/000/013/M019/M019

SOURCE: Ref. zh. Biologiya. Svoyny\* y tom, Abs. 13M119

AUTHOR: Pachkovskaya, N. A.; Muchnik, S. R.

TITLE: Effect of early layered keratoplasty on regeneration processes in the cornea during its pathological changes

CITED SOURCE: Sb. 3 Vses. konferentsiya po peresadke tkaney i organov, 1963. Yerevan, 1963, 426-427

TOPIC TAGS: rabbit, eye, corneal epithelium, homotransplantation, tissue burn, keratoplasty

TRANSLATION: Eyes of rabbits were burned with 20 and 40% sulfuric acid and 10 and 25% ammonia. Early excision of damaged skin followed by complete layer cornea homotransplant retarded the processes of toxic product formation and thereby prevented an autosensitization effect. Structure and tinctorial properties of the damaged cornea layers were completely restored and the latter layers blended with transplant tissue. With late cornea transplants, the

Card 1/2

L 20257-65

ACCESSION NR: AR4045779

percentage of satisfactory accretions sharply decreased. 0

SUB CODE: LS

ENCL: 00

Card 2/2

MUCHNIK, S.Ya., kand.tekhn.nauk [deceased]

Impact of floated timber against holding log booms. Sbor. nauch.  
trud. po lesospl. no.2:200-206 '57. (MIRA 11:7)  
(Hydraulic engineering) (Lumber--Transportation)